



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-7B27E BYPASS RATIO: 5.1  
 UNIQUE ID NUMBER: 01P11CM121 PRESSURE RATIO ( $\pi_{00}$ ): 29.0  
 COMBUSTOR: Tech Insertion  
 ENGINE TYPE: TF RATED THRUST ( $F_{00}$ ) (kN): 121.4

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	2.6	47.4	45.6	14.7
AS % OF ORIGINAL LIMIT	13.4	40.2	46.5	65.6
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			58.2	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			69.7	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			79.2	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			93.6	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 - OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	1.293	0.03	0.31	23.94	13.4
CLIMB OUT	85	2.2	1.031	0.02	0.17	17.89	11.2
APPROACH	30	4.0	0.343	0.05	2.82	9.09	2.1
IDLE	7	26.0	0.110	1.54	29.39	4.36	2.1
LTO TOTAL FUEL (kg) or EMISSIONS (g)			444	273	5320	5231	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				7	7	7	7
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				2.3	43.8	43.1	13.4
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				0.4	2.5	1.1	4.5
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				1.88-2.56	41-45.6	42.4-44.4	8.4-16.9

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT All POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT All POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.6-98.5
TEMPERATURE (K)	277-293
ABS HUMIDITY (kg/kg)	0.0015-0.00628

### FUEL

SPEC	Jet A
H/C	1.92-1.93
AROM (%)	16.2-17.5

MANUFACTURER: CFM International  
 TEST ORGANIZATION: General Electric Company  
 TEST LOCATION: PTO, Ohio  
 TEST DATES: 29/09/2005-23/03/2006

### NO<sub>x</sub> REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

### REMARKS

1. Ref. GE REPORT CR-2097/3 Rev. 1
2. Engine S/N 874-026/01, 778-024/01B, and 892-769/01
3. Ref. GE REPORT CR-900E Rev. 2, July 19, 2010
4. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
5. NO<sub>x</sub> levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements: x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)